

SOME NOTES ON THE GENUS *GALVEZIA* DOMBEY, AND  
ON THE TAXONOMY OF *GALVEZIA JUNCEA* (BENTH.)  
BALL

IRA L. WIGGINS

The genus *Galvezia* (Scrophulariaceae) was described by D. Dombey in Jussieu's *Genera Plantarum* (p. 119), using the spelling shown above. Jussieu accredited the genus to Dombey in the statement, "Character ex D. Dombey mss. & herb. Peruv." Subsequently, for more than a century, English and American botanists attributed the genus to Jussieu and spelled the name "*Galvesia*" instead of "*Galvezia*." Kellogg (p. 17, 18) correctly, but contrary to common usage, followed the original spelling and gave Dombey as the author of the genus when comparing his *Saccularia Veatchii* with *Galvezia limensis*. Bentham, in *De Candolle's Prodrromus* (p. 296), and Bentham and Hooker (p. 934) used the spelling "*Galvesia*" and attributed the genus to Jussieu. Both John Ball (pp. 152-154) and Asa Gray (1887, p. 311) followed Bentham and Hooker's lead, as did Brandegees (p. 167) and Goldman (p. 364) in using the letter "s" instead of "z" in spelling the generic name.

Standley (p. 1306) correctly attributed the genus to Dombey and used the original spelling. In the same year Johnston (pp. 1160, 1161) used both spellings, writing the generic name "*Galvezia*" on page 1160, but reverting to "*Galvesia*" four times in citing the two varieties and the synonyms accompanying them under *Galvezia juncea*. Two years later Munz (p. 373) used the spelling "*Galvesia*."

There seems to be no basis for changing the spelling used by Dombey. Following the description in Jussieu's *Genera Plantarum* appears this sentence, "Nomen a D. Galvez in Hispania Indiarum administro." A check of G. & C. Merriam Company's "Webster's Biographical Dictionary" (p. 573) revealed the name "Galvez" listed five times, always spelled with a "z". There seems to be no possibility that the man whom the genus honored spelled his name "Galves."

In the International Rules of Botanical Nomenclature (Camp, Rickett and Weatherby, p. 26) Section 13, Article 70, reads as follows: "The original spelling of a name or epithet must be retained, except in the case of a typographic error, or of a clearly unintentional orthographic error." No typographic nor orthographic error occurred in the original publication of the name, so the correct orthography is "*Galvezia*." The citation should read: *Galvezia* Dombey in Jussieu, *Genera Plantarum* 119. 1789.

TAXONOMY OF *GALVEZIA JUNCEA* (BENTH.) BALL

Bentham (p. 41) adequately described a plant collected some-

where on the coast of Baja California by Hinds, and called it *Maurandia juncea*. The locality cited in the Botany of the Sulphur read, "From San Diego to the Bay of Magdalena." In the herbarium at Kew are two sheets of the species, both collected by Hinds (or under his direction, for Barclay did much of the actual collecting) and both of which I saw in 1937. Each bears about the same amount of material. The locality given on each label is the same as that cited by Bentham, "From San Diego to Bay of Magdalena." Unless Barclay's personal field notes, which are reputed to have been stored in the British Museum, but which I was unable to consult, yield a more definite station for his collections of "*Maurandia juncea*" I see no basis for assuming that the type locality is "... probably at San Quentin." (Munz, p. 377).

The specimens at Kew belong to that phase of *G. juncea* which is almost glabrous, the leaves, stems, pedicels, calyces and capsules being virtually devoid of hairs. On such plants a faint ring of short, fine hairs encircles the stem at each node, sometimes spreading to the upper surface of the basal part of the adjacent petioles.

In 1860 Kellogg (p. 17, 18) described *Saccularia Veatchii*, basing both the genus and the species on material collected on Cedros Island. He recognized the closeness of *Saccularia* to *Galvezia* but defended his stand in the following words: "This remarkable shrub appears to be closely allied to *Galvezia* of Dombey. As at present defined, it however differs in the style, not being thickened at the top, nor emarginate; neither is the stigma two-lobed. Other points of difference of less importance readily suggest themselves, which must be our apology for distinguishing it from that Peruvian genus."

Kellogg described *Saccularia Veatchii* as having stems "... glandularly villous and somewhat canescent above ..." and the leaves as "... lanceolate ... hirsute above the base, glandularly villous on the lamina above, densely glandularly hirsute below; ...". On the basis of the presence or absence of pubescence, a comparison of Bentham's and Kellogg's descriptions could easily lead one to consider their plants as two distinct, although closely related, species. For a few years they were considered so.

Possibly following a suggestion made by Bentham when he described the species, Asa Gray (1867, p. 377) transferred *Maurandia juncea* to *Antirrhinum* without having seen specimens of the plant from Baja California. He defended his action in the following manner: "I have not seen this; but it seems to be a cogener of the last [*Antirrhinum*] but with smaller flowers and leaves, the uppermost reduced to minute scales. The seeds as described are those of *Antirrhinastrum*." This combination stood for eighteen years.

The combination *Galvezia juncea* has generally been attributed

to Asa Gray on the basis of a paper published in 1887 (p. 311). This, of course, is in error, for John Ball read a paper before the Linnean Society on February 18, 1886 (published April 14, 1886), in which he made the combination (Ball, p. 154). In his paper Ball discussed the relationship between *Galvezia* and *Antirrhinum* and inclined toward following Gray's decision of 1868, namely, to unite the former genus with *Antirrhinum*. But between February 18th and the closing of the printer's forms, Ball received a letter from Gray on which he commented as follows in a terminal note: "Since the above lines were written I have been informed by Dr. Gray that, in the forthcoming Supplement to the American Gamopetalae described in his 'Synoptical Flora,' he has identified Kellogg's *Saccularia* with his own *Antirrhinum junceum*, thus confirming my conjecture on this score. But he further informs me that on examining the living plant of *Gambelia speciosa*, Nutt., hitherto known only from dried specimens, he has found that the projecting palate closes the mouth of the corolla, as in true *Antirrhina*; while it would appear as well from Kellogg's figure as from the dried specimen that the lower lip of *A. junceum*, A. Gr., is nearly or quite plane, as in *Galvesia*. This being the case, it would appear that, although *Galvesia* is nearly allied to some American species of *Antirrhinum*, it may be retained as a separate genus including *G. limensis* and *G. juncea*, the synonymy for the latter being *Maurandia juncea*, Benth. in Bot. Sulph., *Antirrhinum junceum*, A. Gr., and *Saccularia Veatchii*, Kell." (Ball, p. 154).

It seems strange that an error in citing the authority for the combination, *G. juncea*, should have persisted so long, for Dr. Gray himself indicated that Ball had recognized the generic position of *Antirrhinum junceum* (Benth.) A. Gray, when he, Gray, wrote (1887, p. 311), "Excellent specimens, in flower and fruit, have recently been collected by Mr. Orcutt in Lower California where it (*G. juncea*) appears to abound. As Mr. Ball has indicated (Jour. Linn. Soc. XXII. 152), *this is a strict cogener of Galvesia limensis; . . .*" (Italics, save those of the binominal, mine.) Perhaps the suppression of Ball's name in connection with the combination stems from the fact that Gray placed no author's name immediately after the combination in his paper in 1887. Since Gray was reporting on a number of new species and new combinations, it would have been easy for other botanists to overlook Ball's transfer—and they obviously did so.

There is no doubt that Ball's paper was published several months ahead of Gray's. Although the exact date of publication of Gray's paper is not available, it was not published until sometime in 1887, for directly under the "by line" of Gray's paper as published in the Proceedings of the American Academy, appears the statement, "Communicated December 8, 1886." The date on the title page of that volume is 1887. On the other hand, on the

fly leaf of the 22nd volume of the Journal of the Linnean Society is a printed table giving the dates of publication for the various parts included in the volume. "Number 142", the second part of volume 22, included pages 99-168, and was published April 14, 1886. Mr. Ball's paper included pages 137-168. Accordingly, the citation for this species should read: *Galvezia juncea* (Benth.) Ball, Jour. Linn. Soc. 22: 154. 1886.

As mentioned in an earlier paragraph, Bentham described *Maurandia juncea* as glabrous, and Kellogg emphasized the glandular-pubescent character of *Saccularia Veatchii*. Yet Asa Gray (1887, p. 311) apparently had no hesitation about placing the pubescent material from Cedros Island in the same species with the glabrous plants from the mainland of Baja California. I concur in this interpretation, for although the majority of the specimens in the Dudley Herbarium are glabrous except for the faint ring of hairs at the nodes there are some that are uniformly glandular-puberulent on the younger parts. There is one collection taken fourteen miles north of Cataviñá (*Wiggins 4386*), in which the main stems and some of the lateral branches are densely glandular-puberulent, but several other lateral branches, arising from the same nodes as the puberulent ones, are completely glabrous except for the nodal rings! In this specimen the puberulent branchlets seem to have grown slowly, the glabrous ones more rapidly.

Brandegee (p. 167) described *Galvezia glabrata*, which he separated from *G. juncea* on the basis of minute differences (not constant) in the flowers; nearly globose instead of ovoid capsules, and these somewhat pendant instead of erect; and on the larger size of the leaves, these being as much as 3 cm. long in his proposed new species. On the same page he described *G. speciosa* var. *pubescens*, separating it from typical *G. speciosa* (Nutt.) A. Gray, because var. *pubescens* was "hirsute pubescent throughout" instead of glabrous or hirsute-pubescent merely on the flowering parts of the plant.

When Johnston (p. 1160, 1161) reported on his collections from the Gulf of California he reduced *G. glabrata* Brandegee to varietal rank under *G. juncea*, supplanting the epithet "*glabrata*" with "*foliosa*." At the same time he transferred var. *pubescens* from *G. speciosa* to varietal rank under *G. juncea*, making it coordinate with his var. *foliosa*. In remarking about several collections of var. *pubescens* Johnston wrote, "The specimens from Angel de la Guardia present one of those sad cases where two forms grow from one root, for part of the plant, the most in fact, has the characters of the variety *pubescens* while certain branches and leaves are typical of the variety *foliosa*." This parallels the condition found in *G. juncea* var. *typica* as represented by my collection from Cataviñá.

Munz (p. 377, 378) recognized both var. *pubescens* and var. *foliosa*, but apparently with some reluctance for under var. *pubescens* he commented as follows: "Intergrading with var. *foliosa*, Rose 16370 having both sorts on one branch."

Since both glabrous and pubescent twigs, characteristic of var. *pubescens* and the var. *foliosa*, occur on a single plant, the presence or absence of pubescence is worthless for separating varieties in *Galvezia juncea*. The differences in size of leaves and in the shape of the capsule can be utilized to separate the large-leaved variant from var. *typica*, which has smaller leaves and longer, narrower capsules. Both the large- and the small-leaved forms are found with and without pubescence.

In recognizing his varieties "*foliosa*" and "*pubescens*" Johnston discarded the specific epithet "*glabrata*" and substituted the varietal name "*foliosa*". But var. *pubescens* and var. *foliosa*, as Johnston treated them, are one and the same thing, so the first epithet applied in the varietal category, "*pubescens*" must be used under the present rules, even though the epithet "*foliosa*" more appropriately describes one of the salient features of the variety which is separable from var. *typica*.

The following key, together with the citation of references, present a taxonomic resume of *Galvezia juncea* (Benth.) Ball, and the two varieties into which the species seems separable.

Leaves small, usually considerably less than 1 cm. long; capsules ovoid to oblong. la. *G. juncea* var. *typica*.

Leaves larger, usually 1-2.5 cm. long; capsules broadly ovoid to subglobose. lb. *G. juncea* var. *pubescens*.

GALVEZIA JUNCEA (Benth.) Ball, Journ. Linn. Soc. 22: 154. 1886. *Maurandia juncea* Benth. Bot. Sulphur 41. 1844. *Saccularia Veatchii* Kell. Proc. Calif. Acad. 2: 17. 1860. *Antirrhinum junceum* A. Gray, Proc. Am. Acad. 7: 377. 1868.

Confined to the peninsula of Baja California and adjacent islands along both the Pacific and the Gulf of California coasts.

la. GALVEZIA JUNCEA (Benth.) Ball, var. *typica* Munz, Proc. Calif. Acad. IV. 15: 376. 1926.

Along arroyos, on hillsides, and occasionally on the plains, chiefly Lower Sonoran Zone, from about half way between Tijuana and Ensenada southward to the Cape Region and on the adjacent islands. Less common in the Cape Region than the following.

lb. GALVEZIA JUNCEA (Benth.) Ball, var. *pubescens* (Brandegee) I. M. Johnston, Proc. Calif. Acad. IV. 12: 1161. 1924. *G. speciosa* var. *pubescens* Brandegee, Zoe 5: 167. 1903. *G. glabrata* Brandegee, loc. cit. *G. rupicola* Brandegee, Univ. Calif. Pub. Bot. 6: 360. 1916. *G. juncea* var. *foliosa* I. M. Johnston, Proc. Calif. Acad. IV. 12: 1161. 1924.

Rocky hillsides and along arroyos, Lower Sonoran Zone, Rancho Mesquital southward to the Cape Region and on San Lorenzo and San Pedro Nolasco islands in the Gulf of California.

Dudley Herbarium  
Stanford University

#### LITERATURE CITED

- BALL, JOHN. 1865. Notes on the botany of western South America. Jour. Linn. Soc. 22: 137-168.
- BENTHAM, GEORGE. 1844. in Hinds, Richard Brinsley. The Botany of H. M. S. Sulphur. 1-195. pl. 1-60.
- BENTHAM, GEORGE, and J. D. HOOKER. 1876. Genera Plantarum, 2 (2): 533-1279.
- BRANDEGEE, T. S. 1903. Notes and new species of Lower California plants. Zoe 5: 155-174.
- CAMP, W. H., H. W. RICKETT, and C. A. WEATHERBY. 1947. International Rules of Botanical Nomenclature (Unofficial Special Edition). Brittonia 6: 1-120.
- CANDOLLE, ALPHONSO DE. 1846. Prodrromus Systematis Naturalis Regni Vegetabilis. 10: 1-679.
- GOLDMAN, EDWARD A. 1916. Plant records of an expedition to Lower California. Contr. U. S. Nat. Herb. 16: 309-371.
- GRAY, ASA. 1868. Characters of new plants of California and elsewhere, principally of those collected by H. N. Bolander on the State Geological Survey. Proc. Am. Acad. Sci. 7: 327-400.
- . 1887. Contributions to American Botany. 3. Miscellaneous. Proc. Am. Acad. Sci. 22: 308-313.
- JOHNSTON, IVAN M. 1924. Expedition of the California Academy of Sciences to the Gulf of California in 1921. The Botany (The Vascular Plants). Proc. Calif. Acad. Sci., ser. 4, 12: 951-1218.
- JUSSIEU, ANTONII LAURENTII DE. 1789. Genera Plantarum Secundum Ordines Naturales. 2-499.
- KELLOGG, A. 1860. New genera and species of plants, found by Dr. John A. Veatch, at Cerros Island. Proc. Calif. Acad. Sci. 2: 15-20.
- MERRIAM COMPANY, G. & C. 1943. Webster's Biographical Dictionary. i-xxxvi. 1-1697.
- MUNZ, PHILIP A. 1926. The Antirrhinoideae-Antirrhineae of the New World. Proc. Calif. Acad. Sci. IV. 15: 323-397.
- STANDLEY, PAUL C. 1924. Trees and Shrubs of Mexico. Contr. U. S. Nat. Herb. 23 (4): 849-1312.

#### REVIEW

*Hepaticae of North America. Part V.* By T. C. FRYE and LOIS CLARK. University of Washington Publications in Biology, vol. 6, no. 5. pp. 735-1022, text figs. 94. 1947. \$4.50. University of Washington Press, Seattle.

With the appearance of Part V of the "Hepaticae of North America" by Frye and Clark, we have available for the first time in this country a reference work treating all of our liverworts. This final part includes the Frullanioideae, the Lejeunoideae, and the Anthocerotales. The interest of the authors in the first group is evident; the work of Evans underlies the treatment of the